UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,789	12/09/2003	Marlin H. Mickle	214001-01038-1	4950

3705 7590 08/09/2006

ECKERT SEAMANS CHERIN & MELLOTT
600 GRANT STREET
44TH FLOOR
PITTSBURGH, PA 15219

EXAMINER	
PREVIL, DANIEL	

ART UNIT	PAPER NUMBER
2612	

DATE MAILED: 08/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/731,789	MICKLE ET AL.	
	Examiner	Art Unit	
	Daniel Previl	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This action is responsive to communication filed on May 26, 2006.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fancher (US 4,700,179) in view of Gila et al. (US 5,731,762).

Regarding claim 1, Fancher discloses a method of identifying an article of interest (col. 3, lines 34-38) comprising: providing one of a plurality of RF antennas each having a non-linear element and being resonant at one of plurality of different frequencies positioned on an article of interest (fig. 1; col. 4, lines 9-56).

Fancher discloses the limitations above but fails to explicitly disclose the step of interrogating said one RF antenna with RF energy of a first frequency, converting said interrogating RF energy into reflected energy RF energy of a different frequency from said first frequency; sensing said reflected RF energy and on the basis of a difference between said first frequency and said different frequency determining if a specific said antenna is present.

However, Gila discloses interrogating one RF antenna with RF energy of a first frequency (fig. 1; abstract); converting interrogating RF energy into reflected

RF energy of a different frequency from first frequency (fig. 1; col. 4, lines 3-26); sensing said reflected RF energy and on the basis of a difference between said first frequency and said different frequency determining if a specific said antenna is present (deviation frequency in fig. 1; col. 4, lines 3-26).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Gila's reflected RF energy in Fancher. Doing so would modify Fancher's system with Gila's reflected RF energy in order to accurately detect a RF response signal from the target by determining quickly and efficiently if a target is present in the target field, thereby precluding the article from being stolen as taught by Gila (col. 1, lines 17-53).

Regarding claim 2, Fancher discloses a non-linear element is a rectifying diode (diode 36) (col. 4, lines 9-13).

Regarding claim 3, Fancher discloses specific antenna is present and different frequency being about double first frequency (fig. 1; col. 4, lines 21-25 and lines 57-59).

Regarding claims 4-7, Fancher and Gila disclose all the limitations in claim 1 and Gila further discloses antenna assembly providing a half wave rectified sine wave from interrogating RF energy (fig. 2; col. 4, lines 60-64; col. 5, lines 10-24). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Gila's half wave rectified into Fancher's system. Doing so would modify Fancher's system with Gila's half wave rectified in order to accurately detect a response signal from the target by determining if a

target is present in the target field, thereby preventing the article from being stolen as taught by Gila (col. 1, lines 17-53).

Regarding claim 8, Fancher discloses the step of employing a spectrum analyzer (frequency center) in analyzing different frequency (col. 4, lines 26-32).

Regarding claims 9-11, Fancher discloses the step of employing a binary analysis in determining if an article of interest is present , employing a spectrum analyzer structured to monitor each interrogating frequency in determining if an article of interest is present (col. 4, lines 26-56).

Regarding claim 12, Fancher discloses a second non-linear element cooperating with said non-linear element to provide a variable readout which is a function of a specific physical condition (col. 9, lines 6-13).

Regarding claim 13, Fancher discloses physical condition selected from radiation (radiating antenna in col. 4, lines 26-27).

Regarding claim 14, Fancher discloses the step of employing as non-linear elements a variable non-linear element (col. 9, lines 6-13).

Regarding claim 15, Fancher discloses determining if an article of interest is present (fig. 1) comprising: article of interest having at least one antenna being resonant at one frequency of a plurality of available frequencies (fig. 1; col. 8, lines 22-54); a non-linear element operatively associated with antenna (diode 38) (fig. 1; col. 8, lines 29-31).

Fancher discloses all the limitations above but fails to explicitly disclose an RF frequency generator for directing RF energy of a particular frequency to

antenna; a detector for receiving reflected RF energy from antenna; a processor for determining from a difference between said reflected frequency and said directed particular frequency whether the antenna is a specific antenna.

However, Gila discloses an RF frequency generator 2 for directing RF energy of a particular frequency to antenna (fig. 1); a detector 13 for receiving reflected RF energy from antenna (fig. 1); a processor (controllable impedance 23 in fig. 2) for determining from a difference between said reflected frequency and said directed particular frequency whether the antenna is a specific antenna (fig. 1-fig. 2; col. 4, lines 13-43).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Gila's RF frequency generator and a detector for receiving RF energy from the antenna in Fancher. Doing so would modify Fancher's system with Gila's RF frequency generator and a detector for receiving RF energy from the antenna in order to accurately detect a RF response signal from the target by determining quickly and efficiently if a target is present in the target field, thereby avoiding the article from being stolen as taught by Gila (col. 1, lines 17-53).

Regarding claim 16, Fancher discloses a non-linear element is a rectifying diode (diode 36) (col. 4, lines 9-13).

Regarding claims 17-19, Fancher and Gila disclose all the limitations in claim 1 and Gila further discloses antenna assembly providing a half wave rectified sine wave from interrogating RF energy (fig. 2; col. 4, lines 60-64; col. 5,

lines 13-16). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Gila's half wave rectified into Fancher's system. Doing so would modify Fancher's system with Gila's half wave rectified in order to accurately detect a response signal from the target by determining if a target is present in the target field, thereby preventing the article from being stolen as taught by Gila (col. 1, lines 17-53).

Regarding claim 20, Fancher and Gila disclose all the limitations in claim 15 and Gila further discloses RF frequency generator being structured to provide at least two said interrogating RF frequencies (fig. 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Gila's RF frequency generator into Fancier's system. Doing so would modify Fancher's system with Gila's RF frequency generator in order to accurately detect a response signal from the target by determining if a target is present in the target field, thereby preventing the article from being stolen as taught by Gila (col. 1, lines 17-53).

Regarding claim 21, Fancher discloses a spectrum analyzer for analyzing said different frequencies (abstract; col. 8, lines 22-54).

Regarding claim 22, Fancher discloses a second non-linear element cooperating with said non-linear element to provide a variable readout which is a function of a specific physical condition (col. 9, lines 6-13).

Regarding claim 23, Fancher discloses physical condition selected from radiation (radiating antenna in col. 4, lines 26-27).

Regarding claim 24, Fancher discloses a method of monitoring an ambient physical property (abstract) comprising: providing an antenna having a non-linear element whose response depends on the physical property being monitored (fig. 1; col. 4, lines 9-56).

Fancher discloses the limitations above but fails to explicitly disclose the step of interrogating said one RF antenna with RF energy of a first frequency, converting said interrogating RF energy into reflected energy RF energy of a different frequency from said first frequency, said different frequency being dependent on the physical property being monitored; sensing said reflected RF energy and on the basis of a difference between said first frequency and said different frequency determining the state of said physical property.

However, Gila discloses interrogating one RF antenna with RF energy of a first frequency (fig. 1); converting interrogating RF energy into reflected RF energy of a different frequency from first frequency, said different frequency being dependent on the physical property being monitored (fig. 1; col. 4, lines 3-26); said different frequency being dependent on the physical property being monitored; sensing said reflected RF energy and on the basis of a difference between said first frequency and said different frequency determining the state of said physical property (fig. 1; col. 4, lines 3-26).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Gila's RF reflected energy in Fancher. Doing so would modify Fancher's system with RF reflected energy in

order to accurately detect a RF response signal from the target by determining quickly and efficiently if a target is present in the target field, thereby precluding the article from being stolen as taught by Gila (col. 1, lines 17-53).

Regarding claim 25, Fancher discloses a non-linear element is a rectifying diode (diode 36) (col. 4, lines 9-13).

Regarding claim 26, Fancher discloses different frequency being about double first frequency (fig. 1; col. 4, lines 21-25 and lines 57-59).

Regarding claims 27-29, Fancher and Gila disclose all the limitations in claim 24 and Gila further discloses antenna assembly providing a half wave rectified sine wave from interrogating RF energy (fig. 2; col. 4, lines 60-64; col. 5, lines 13-16). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Gila's half wave rectified into Fancher's system. Doing so would modify Fancher's system with Gila's half wave rectified in order to accurately detect a response signal from the target by determining if a target is present in the target field, thereby preventing the article from being stolen as taught by Gila (col. 1, lines 17-53).

Regarding claim 30, Fancher discloses the step of employing a spectrum analyzer (frequency center) in analyzing different frequency (col. 4, lines 26-32).

Regarding claim 31, Fancher discloses employing a second non-linear element cooperating with said non-linear element to provide a determination regarding whether an article of interest is present (col. 9, lines 6-13).

Regarding claim 32, Fancher discloses physical condition selected from radiation (radiating antenna in col. 4, lines 26-27).

Regarding claim 33, Fancher discloses a method of monitoring an ambient physical property (abstract) comprising: antenna being resonant at one frequency of a plurality of available frequencies (fig. 1; col. 8, lines 22-54); a non-linear element operatively associated with antenna whose response depends on the physical property being monitored (fig. 1; col. 4, lines 9-56).

Fancher discloses the limitations above but fails to explicitly disclose an RF frequency generator for directing RF energy at a particular frequency to said antenna, a detector for receiving reflected RF energy from said antenna, said reflected energy having a different frequency that is dependent on the physical property being monitored; a processor for determining from a difference between said particular frequency and said different frequency the state of the physical property being monitored.

However, Gila discloses an RF frequency generator 2 for directing RF energy at a particular frequency to said antenna (fig. 1), a detector 13 for receiving reflected RF energy from said antenna, said reflected energy having a different frequency that is dependent on the physical property being monitored (fig. 1); a processor for determining from a difference between said particular frequency and said different frequency the state of the physical property being monitored (fig. 1-fig. 2; col. 4, lines 13-43).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate RF frequency generator in Fancher. Doing so would modify Fancher's system with Gila's RF frequency generator in order to accurately detect a RF response signal from the target by determining quickly and efficiently if a target is present in the target field, thereby precluding the article from being stolen as taught by Gila (col. 1, lines 17-53).

Regarding claim 34, Fancher discloses a non-linear element is a rectifying diode (diode 36) (col. 4, lines 9-13).

Regarding claims 35-37, Fancher and Gila disclose all the limitations in claim 1 and Gila further discloses antenna assembly providing a half wave rectified sine wave from interrogating RF energy (fig. 2, col. 4, lines 60-64; col. 5, lines 13-16). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Gila's half wave rectified into Fancher's system. Doing so would modify Fancher's system with Gila's half wave rectified in order to accurately detect a response signal from the target by determining if a target is present in the target field, thereby preventing the article from being stolen as taught by Gila (col. 1, lines 17-53).

Regarding claim 38, Fancher and Gila disclose all the limitations in claim 15 and Gila further discloses RF frequency generator being structured to provide at least two said interrogating RF frequencies (fig. 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Gila RF frequency generator into Fancher's system. Doing so

would modify Fancher's system with Gila's RF frequency generator in order to accurately detect a response signal from the target by determining if a target is present in the target field, thereby preventing the article from being stolen as taught by Gila (col. 1, lines 17-53).

Regarding claim 39, Fancher discloses a spectrum analyzer for analyzing said different frequencies (abstract; col. 8, lines 22-54).

Regarding claims 40-41, Fancher discloses a second non-linear element cooperating with said non-linear element to provide a variable readout which is a function of a specific physical condition (col. 9, lines 6-13).

Response to Arguments

3. Applicant's arguments with respect to claims 1-41 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Williams (US 4,471,344) discloses dual frequency anti-theft system.

Herzl (US 4,391,149) discloses a Doppler-type ultrasonic flowmeter.

Petrinovic (US 6,927,692) discloses an RF inventory system.

Newham (US 5,471,198) discloses a device for monitoring the presence of a person using a reflective energy beam.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Previl whose telephone number is (571) 272-2971. The examiner can normally be reached on Monday-Thursday. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel WU can be reached on (571) 272-2964. The fax phone number for the organization where this application or proceeding is assigned is 571 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel Previl
Examiner
Art Unit 2636

DP
July 26, 2006.